

AD-A208 679

CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OAS No. 0704-0128

1. SECURITY CLASSIFICATION

1b. RESTRICTIVE MARKINGS

2. SECURITY CLASSIFICATION AUTHORITY

3. DISTRIBUTION/AVAILABILITY OF REPORT

3. DISTRIBUTION/AVAILABILITY OF REPORT

Approved for public release;
distribution unlimited.

4. MONITORING ORGANIZATION REPORT NUMBER(S)

5. MONITORING ORGANIZATION REPORT NUMBER(S)

AFOSR-TK- 89-0674

6a. NAME OF PERFORMING ORGANIZATION

University of Maryland
Mathematics Department6b. OFFICE SYMBOL
(if applicable)

7a. NAME OF MONITORING ORGANIZATION

AFOSR

6c. ADDRESS (City, State, and ZIP Code)

College Park, MD 20742

7b. ADDRESS (City, State, and ZIP Code)

BLDG 410
BAFB DC 20332-64488a. NAME OF FUNDING/SPONSORING
ORGANIZATION

AFOSR

8b. OFFICE SYMBOL
(if applicable)

9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

F49620-79-C-0095

8c. ADDRESS (City, State, and ZIP Code)

BLDG 410
BAFB DC 20332-6448

10. SOURCE OF FUNDING NUMBERS

PROGRAM
ELEMENT NO.
61102FPROJECT
NO.
2304TASK
NO.
A5WORK UNIT
ACCESSION NO.

11. TITLE (Include Security Classification)

BINARY TIME SERIES

12. PERSONAL AUTHOR(S)

B. Kedem, E. Slud

13a. TYPE OF REPORT

Final

13b. TIME COVERED

FROM _____ TO _____

14. DATE OF REPORT (Year, Month, Day)

July 1980

15. PAGE COUNT

1

16. SUPPLEMENTARY NOTATION

17. COSATI CODES

FIELD

GROUP

SUB-GROUP

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

DTIC
ELECTE
JUN 07 1989
S H D

89 6 06 036

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT

☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION

unclassified

22a. NAME OF RESPONSIBLE INDIVIDUAL

22b. TELEPHONE (Include Area Code)
767-502522c. OFFICE SYMBOL
NM

(1)
BINARY TIME SERIES

Rost

FINAL REPORT ON CONTRACT [REDACTED] F49620-79-C-0095

(B. Kedem and E. Slud, Mathematics Department,
University of Maryland, College Park, MD 20742)

AFOSR-TR-89-0674

The research titled "Binary Time Series" under this contract has dealt with higher order crossings, quantities which were defined and proved to be useful in discrimination in time series. In particular the Higher Order Crossings Theorem has been proved and a new goodness of fit and discrimination statistic has been suggested and applied in testing model adequacy in ARIMA processes, and in discrimination in EEG data.

A connection with an application to particles arrangements in physics has been found and a quantity called an m'th order unit has been defined. This has been applied in finding the distribution of rare events in Binary Series.

This work resulted in three reports:

1. Higher Order Crossings in the Discrimination of Time Series I, TR 79-66, Mathematics Department, University of Maryland. (Kedem and Slud)
2. Higher Order Crossings in the Discrimination of Time Series II, TR 79-81, Mathematics Department, University of Maryland. (Kedem and Slud)
3. On Nearest Neighbor Degeneracies of Indistinguishable Particles, TR 80-35, Mathematics Department, University of Maryland. (Kedem)

Three papers were sent for publication:

1. The Signature Problem for Stationary Time Series. (Kedem and Slud)
2. On Goodness of Fit of Time Series Models: An Application of Higher Order Crossings. (Kedem)
3. On Nearest Neighbor Degeneracies in Indistinguishable Particles. (Kedem)

No patent has been established. The above three reports have been sent to the Air Force Office of Scientific Research. The first paper is a summary of reports 1, 2. The second paper was sent to AFOSR together with the renewal application. The third paper is also the third report.

Grant AFOSR 80-0211 is the continuation of Contract F49620-79-C-0095.

July 7, 1980



Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	